APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
CERVETTI, DAVID GARCIA

ART UNIT	PAPER NUMBER
2136	

DATE MAILED: 09/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/964,221	THOMAS ET AL.
	Examiner	Art Unit	
	David G. Cervetti	2136	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>26 September 2001</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-41</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-41</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>26 September 2001</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>9/26/01</u>.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1.   Claims 1-41 are pending and have been examined.

Information Disclosure Statement

2.   The information disclosure statement filed 9/26/2001 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered. The missing copies are line items BB and BF of the information disclosure statement filed 9/26/2001.

3.   The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Specification

4.   The disclosure is objected to because of the following informalities: "DNA" (page 3, line 22). While well known in the art, this term has not been defined.

5.   The incorporation of essential material in the specification by reference to an unpublished U.S. application, foreign application or patent, or to a publication is improper. Applicant is required to amend the disclosure to include the material

incorporated by reference, if the material is relied upon to overcome any objection, rejection, or other requirement imposed by the Office. The amendment must be accompanied by a statement executed by the applicant, or a practitioner representing the applicant, stating that the material being inserted is the material previously incorporated by reference and that the amendment contains no new matter. 37 CFR 1.57(f).

6.   The attempt to incorporate subject matter into this application by reference to "all references, applications, patents, and publications cited above" (page 36, lines15-16) is improper because they are considered essential material. An application for a patent when filed may incorporate "essential material" by reference to (1) a U.S. patent, (2) a U.S. patent application publication, or (3) a pending U.S. application, subject to the conditions set forth below. Essential material" is defined as that which is necessary to (1) describe the claimed invention, (2) provide an enabling disclosure of the claimed invention, or (3) describe the best mode.

Claim Rejections - 35 USC § 112

7.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8.   Claims 2 and 32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "substantially" in claims 2 and 32 is a relative term which renders the claim indefinite. The term "substantially" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The concealed data is **substantially** indistinguishable.

Claim Rejections - 35 USC § 103

9.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

10.   Claims 1-10, 13-20, and 22 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Bianco et al. (US Patent Number: 6,256,737, hereinafter

"Bianco"), and further in view of Meister et al. (US Patent Number: 6,798,334,

hereinafter "Meister").

Regarding claim 1, Bianco teaches a method of authenticating concealed and

statistically varying multi-dimensional data, the method comprising the steps of:

acquiring an initial measurement of an item, wherein the initial measurement is subject

to measurement error (column 17, lines 36-67); applying a transformation to the initial

measurement to generate reference template data (column 26, lines 48-67, column 27,

lines 1-67); acquiring a subsequent measurement of the item, wherein the subsequent

measurement is subject to measurement error (column 24, lines 1-56); applying the

transformation to the subsequent measurement (column 17, lines 36-67, column 24,

lines 1-56). Bianco does not expressly disclose calculating a Euclidean distance metric

between the transformed measurements; wherein the calculated Euclidean distance

metric is identical to a Euclidean distance metric between the measurements prior to

transformation. However, Meister teaches using Euclidean distance for verification of

biometric data (column 7, lines 35-67). Therefore, it would have been obvious to one

having ordinary skill in the art at the time the invention was made to use Euclidean

distance measurements to verify authenticity of an obtained biometric data against a

stored, already measured, biometric data. One of ordinary skill in the art would have

been motivated to do so because a comparison of biometric data detected with stored

reference values provides a way of authenticating/verifying a biometric characteristic

(Meister, column 1, lines 10-35).

Regarding claim 2, the combination of Bianco and Meister does not expressly

disclose wherein the steps of applying the transformation generate data that is

substantially indistinguishable from Gaussian white noise. However, Examiner takes

Official Notice that generating a type of data camouflaged as another type of data was

conventional and well known since it conceals information that may potentially help

someone who should not access obtain access to it.

Regarding claim 3, the combination of Bianco and Meister teaches the

limitations as set forth under claim 1 above. Furthermore, Meister teaches wherein the

steps of applying the transformation comprise normalizing the measurements (column

7, lines 35-67).

Regarding claim 4, the combination of Bianco and Meister teaches the

limitations as set forth under claim 3 above. Therefore, it would have been obvious to

one having ordinary skill in the art at the time the invention was made to use other

conventional statistical techniques such as centering, normalizing, and scale

transforming. One of ordinary skill in the art would have been motivated to do so

because it was well known in the art to use statistical techniques (Meister, column 7,

lines 35-67).

Regarding claim 5, the combination of Bianco and Meister does not expressly

teach permuting the measurements. However, Examiner takes Official Notice that the

use of permutation as a transformation was conventional and well known (i.e. the Data

Encryption Standard performs an initial permutation, a transformation, and a final

permutation in order to "conceal" data). Therefore, it would have been obvious to one

having ordinary skill in the art at the time the invention was made to use permutation of

the measurements since Examiner takes Official Notice that it was conventional and

well known.

Regarding claim 6, the combination of Bianco and Meister teaches the

limitations as set forth under claim 5 above. Furthermore, Bianco teaches employing an

item of secret information (column 56, lines 28-67).

Regarding claim 7, the combination of Bianco and Meister teaches the

limitations as set forth under claim 6 above. Furthermore, Bianco teaches wherein

permuting comprises employing a passcode (column 56, lines 28-67).

Regarding claim 8, the combination of Bianco and Meister does not expressly

teach using a hash function. However, Examiner takes Official Notice that the use of

hash functions was conventional and well known. Therefore, it would have been

obvious to one having ordinary skill in the art at the time the invention was made to use

the result of a hash function of the passcode since Examiner takes Official Notice that it

was conventional and well known.

Regarding claim 9, the combination of Bianco and Meister teaches the limitations as set forth under claim 1 above. Furthermore, Meister teaches wherein the steps of applying the transformation comprise employing a linear transformation (column 7, lines 40-67).

Regarding claim 10, the combination of Bianco and Meister teaches the limitations as set forth under claim 9 above. Furthermore, Meister teaches wherein employing a linear transformation comprises employing a transformation matrix with orthonormal columns (column 7, lines 40-67).

Regarding claim 13, the combination of Bianco and Meister does not expressly teach wherein the employing a linear transformation comprises permuting the linearly transformed data. However, Examiner takes Official Notice that the use of permutation as a transformation was conventional and well known (i.e. the Data Encryption Standard performs an initial permutation, a transformation, and a final permutation in order to "conceal" data). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use permutation of the measurements since Examiner takes Official Notice that it was conventional and well known.

Regarding claim 14, the combination of Bianco and Meister teaches the limitations as set forth under claim 13 above. Furthermore, Bianco teaches employing an item of secret information (column 56, lines 28-67).

Regarding claim 15, the combination of Bianco and Meister teaches the limitations as set forth under claim 14 above. Furthermore, Bianco teaches wherein

permuting the linearly transformed data comprises employing a passcode (column 56, lines 28-67).

Regarding claim 16, the combination of Bianco and Meister does not expressly teach using a hash function. However, Examiner takes Official Notice that the use of hash functions was conventional and well known. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the result of a hash function of the passcode since Examiner takes Official Notice that it was conventional and well known.

Regarding claim 17, the combination of Bianco and Meister teaches the limitations as set forth under claim 1 above. Furthermore, Bianco teaches wherein the measurements comprise biometric data (column 26, lines 48-67, column 27, lines 1-67).

Regarding claim 18, the combination of Bianco and Meister teaches the limitations as set forth under claim 17 above. Furthermore, Bianco teaches wherein the measurements comprise measurements selected from the group consisting of fingerprints, retinal scans, facial scans, hand geometry, spectral data, and voice data (abstract, column 8, lines 1-67, column 9, lines 1-10).

Regarding claim 19, the combination of Bianco and Meister teaches the limitations as set forth under claim 17 above. Furthermore, Bianco teaches storing the reference template data on a smart card to be carried by an individual from whom the biometric data was taken (column 30, lines 15-30).

Regarding claim 20, the combination of Bianco and Meister teaches the limitations as set forth under claim 1 above. Furthermore, Bianco teaches wherein the

measurements comprise spectral data (abstract, column 8, lines 1-67, column 9, lines 1-10).

Regarding claim 22, the combination of Bianco and Meister does not expressly disclose adding pseudo-dimensions to the measurements to enhance concealment. However, Examiner takes Official Notice that adding noise to existing data for the purposes of concealing information was conventional and well known (i.e. watermarking, steganography). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to add pseudo-dimensions to the input data to enhance concealment since Examiner takes Official Notice that it was conventional and well known.

11.   **Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bianco and Meister, and further in view of Wyner (US Patent Number: 4,379,205).**

Regarding claim 11, the combination of Bianco and Meister does not expressly teach using a normalized Hadamard matrix. However, Wyner teaches using a Hadamard matrix for transforming data. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use a Hadamard matrix. One of ordinary skill in the art would have been motivated to do so because it was known to use matrices to transform/scramble data (Wyner, columns 2-3).

12.   **Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bianco and Meister, and further in view of Meyer et al. (US Patent Number: 6,748,362, hereinafter "Meyer").**

Regarding claim 12, the combination of Bianco and Meister does not expressly

teach employing a normalized matrix comprising Fourier coefficients with a cosine / sine

basis. However, Meyer teaches employing a linear transformation comprising Fourier

coefficients with a cosine / sine basis (column 6, lines 27-42). Therefore, it would have

been obvious to one having ordinary skill in the art at the time the invention was made

to use a matrix comprising Fourier coefficients with a cosine / sine basis. One of

ordinary skill in the art would have been motivated to do so because it was known to

use matrices and Fourier coefficients to transform/scramble data (Meyer, column 2,

lines 20-40).

13.   **Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over**

Bianco and Meister, and further in view of MacAleese et al. (US Patent Number:

6,359,582, hereinafter "MacAleese").

Regarding claim 21, the combination of Bianco and Meister does not expressly

disclose that the spectral data is weapons spectra. However, MacAleese teaches using

spectral data of weapons to detect weapons by comparing the spectral data to pre-

stored measurements (column 7, lines 45-67, column 8, lines 1-67). Therefore, it would

have been obvious to one having ordinary skill in the art at the time the invention was

made to use weapons spectral data as input for the system of Bianco. One of ordinary

skill in the art would have been motivated to do so because it was known to use spectral

data to verify/authenticate input data.

14.   Claims 23-32, 35-38, and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bianco, and further in view of Meister and Rahtgen (US Patent Number: 4,882,779).

Regarding claim 23, Bianco teaches a method of concealing multidimensional digital input data and maintaining an ability to authenticate the concealed data (column 17, lines 36-67). Meister teaches normalizing the input data (column 7, lines 35-67); linearly transforming the normalized and permuted data with a transformation matrix (column 7, lines 35-67). Rahtgen teaches authenticating concealed data without conversion back into the input data (column 1, lines 17-43); permuting elements of the normalized data (column 9, lines 25-45); permuting the linearly transformed data to create the concealed data (column 9, lines 25-45). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to normalize, permute, and use matrices in the system of Bianco. One of ordinary skill in the art would have been motivated to do so because it was conventional and well known to normalize, permute, and use matrices to create concealed data, and to authenticate encrypted data in an encrypted state, without decrypting the data.

Regarding claim 24, the combination of Bianco, Meister, and Rahtgen teaches the limitations as set forth under claim 23 above. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use other conventional statistical techniques such as centering, normalizing, and scale transforming. One of ordinary skill in the art would have been motivated to do so

because it was well known in the art to use statistical techniques (Meister, column 7, lines 35-67).

Regarding claims 25 and 29, the combination of Bianco, Meister, and Rahtgen teaches the limitations as set forth under claim 23 above. Furthermore, Bianco teaches employing an item of secret information (column 56, lines 28-67).

Regarding claims 26, the combination of Bianco, Meister, and Rahtgen teaches the limitations as set forth under claim 23 above. Furthermore, Bianco teaches wherein permuting elements comprises employing a passcode (column 56, lines 28-67).

Regarding claim 27, the combination of Bianco, Meister, and Rahtgen does not expressly teach using a hash function. However, Examiner takes Official Notice that the use of hash functions was conventional and well known. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the result of a hash function of the passcode since Examiner takes Official Notice that it was conventional and well known.

Regarding claim 28, the combination of Bianco, Meister, and Rahtgen teaches the limitations as set forth under claim 23 above. Furthermore, Meister teaches wherein linearly transforming comprises employing a transformation matrix with orthonormal columns (column 7, lines 40-67).

Regarding claims 30, the combination of Bianco, Meister, and Rahtgen teaches the limitations as set forth under claim 29 above. Furthermore, Bianco teaches wherein permuting the linearly transformed data comprises employing a passcode (column 56, lines 28-67).

Regarding claim 31, the combination of Bianco, Meister, and Rahtgen does not

expressly teach using a hash function. However, Examiner takes Official Notice that the

use of hash functions was conventional and well known. Therefore, it would have been

obvious to one having ordinary skill in the art at the time the invention was made to use

the result of a hash function of the passcode since Examiner takes Official Notice that it

was conventional and well known.

Regarding claim 32, the combination of Bianco, Meister, and Rahtgen does not

expressly disclose wherein the concealed data is substantially indistinguishable from

Gaussian white noise. However, Examiner takes Official Notice that generating a type of

data camouflaged as another type of data was conventional and well known since it

conceals information that may potentially help someone who should not access obtain

access to it.

Regarding claim 35, the combination of Bianco, Meister, and Rahtgen teaches

the limitations as set forth under claim 23 above. Furthermore, Bianco teaches wherein

the input data comprises biometric data (column 26, lines 48-67, column 27, lines 1-67).

Regarding claim 36, the combination of Bianco, Meister, and Rahtgen teaches

the limitations as set forth under claim 35 above. Furthermore, Bianco teaches wherein

the input data comprises data selected from the group consisting of fingerprints, retinal

scans, facial scans, hand geometry, spectral data, and voice data (abstract, column 8,

lines 1-67, column 9, lines 1-10).

Regarding claim 37, the combination of Bianco, Meister, and Rahtgen teaches

the limitations as set forth under claim 35 above. Furthermore, Bianco teaches

authenticating the transformed input data with reference template data stored on a

smart card to be carried by an individual from whom the biometric data was taken

(column 30, lines 15-30).

Regarding claim 38, the combination of Bianco, Meister, and Rahtgen teaches

the limitations as set forth under claim 23 above. Furthermore, Bianco teaches wherein

the input data comprises spectral data (abstract, column 8, lines 1-67, column 9, lines 1-

10).

Regarding claim 40, the combination of Bianco, Meister, and Rahtgen does not

expressly disclose adding pseudo-dimensions to the input data to enhance

concealment. However, Examiner takes Official Notice that adding noise to existing data

for the purposes of concealing information was conventional and well known (i.e.

watermarking, steganography). Therefore, it would have been obvious to one having

ordinary skill in the art at the time the invention was made to add pseudo-dimensions to

the input data to enhance concealment since Examiner takes Official Notice that it was

conventional and well known.

15.   Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over

Bianco, Meister, and Rahtgen, and further in view of Wyner.

Regarding claim 33, the combination of Bianco, Meister, and Rahtgen does not

expressly teach using a normalized Hadamard matrix. However, Wyner teaches using a

Hadamard matrix for transforming data. Therefore, it would have been obvious to one

having ordinary skill in the art at the time the invention was made to use a Hadamard

matrix. One of ordinary skill in the art would have been motivated to do so because it was known to use matrices to transform/scramble data (Wyner, columns 2-3).

16.   Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bianco, Meister, and Rahtgen, and further in view of Meyer.

    Regarding claim 34, the combination of Bianco, Meister, and Rahtgen does not expressly teach wherein in the linearly transforming step the transformation matrix comprises a normalized matrix comprising Fourier coefficients with a cosine / sine basis. However, Meyer teaches employing a linear transformation comprising Fourier coefficients with a cosine / sine basis (column 6, lines 27-42). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use a matrix comprising Fourier coefficients with a cosine / sine basis. One of ordinary skill in the art would have been motivated to do so because it was known to use matrices and Fourier coefficients to transform/scramble data (Meyer, column 2, lines 20-40).

17.   Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bianco, Meister, and Rahtgen, and further in view of MacAleese.

    Regarding claim 39, the combination of Bianco, Meister, and Rahtgen does not expressly disclose that the spectral data is weapons spectra. However, MacAleese teaches using spectral data of weapons to detect weapons by comparing the spectral data to pre-stored measurements (column 7, lines 45-67, column 8, lines 1-67). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use weapons spectral data as input for the system of Bianco.

One of ordinary skill in the art would have been motivated to do so because it was

known to use spectral data to verify/authenticate input data.

18.   Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over

Bianco, and further in view of Rahtgen.

    Regarding claim 41, Bianco teaches a method of concealing and authenticating

statistically varying multi-dimensional data (column 17, lines 36-67), the method

comprising the steps of: acquiring a measurement of an item, wherein the measurement

is subject to measurement error (column 17, lines 36-67, column 24, lines 1-56);

applying a transformation to the measurement to substantially conceal the

measurement (column 26, lines 48-67, column 27, lines 1-67). Bianco does not

expressly disclose authenticating the transformed measurement without removing

concealment of the transformed measurement and without employing an error-

correction algorithm. However, Rahtgen teaches authenticating the transformed

measurement without removing concealment of the transformed measurement and

without employing an error-correction algorithm (column 1, lines 17-43). Therefore, it

would have been obvious to one having ordinary skill in the art at the time the invention

was made to authenticate encrypted data in an encrypted state, without decrypting the

data. One of ordinary skill in the art would have been motivated to do so because it was

conventional and well known to authenticate encrypted data in an encrypted state,

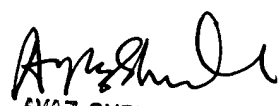without decrypting the data.

Conclusion

19.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patent Number 5,454,040 to Russell and US Patent Number 6,741,636 to Lender disclose arranging data to appear as white noise to render it indistinguishable from white noise. US Patent Number 5,394,471 to Ganesan et al. disclose using conventional statistical techniques relating to validating data.

20.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to David G. Cervetti whose telephone number is (571) 272-5861. The examiner can normally be reached on Monday-Friday 7:00 am - 5:00 pm, off on Wednesday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz R. Sheikh can be reached on (571) 272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AYAZ SHEIKH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

DGC